GE ELECTRONICS

6U10

COMPACTRON THREE-SECTION TRIODE

DESCRIPTION AND RATING

The 6U10 is a compactron containing two medium-mu triodes and one high-mu triode.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

	Series Circuit*	Parallel Circuit‡	
Heater Voltage, AC or DC	6.3	6.3±0.6§	Volts
Heater Current	0.6±0.04§	0.6¶	Amperes
Heater Warm-up Time, Average#	11	---	Seconds

Direct Interelectrode CapacitancesΔ

	Section 1	Section 2	Section 3	
Grid to Plate: (g to p)	1.3	1.3	1.2	pf
Input: g to (h + k)	1.7	1.5	1.8	pf
Output: p to (h + k)	0.26	0.28	0.9	pf

MECHANICAL

Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Outline Drawing - EIA 9-56

Maximum Diameter	1.188	Inches
Maximum Over-all Length	1.875	Inches
Maximum Seated Height	1.500	Inches

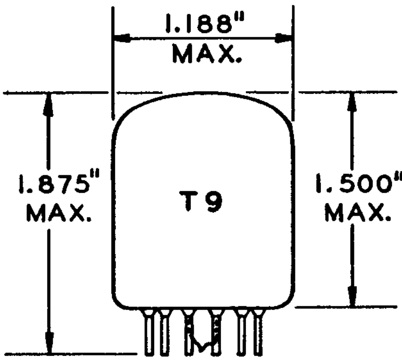
MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

PHYSICAL DIMENSIONS

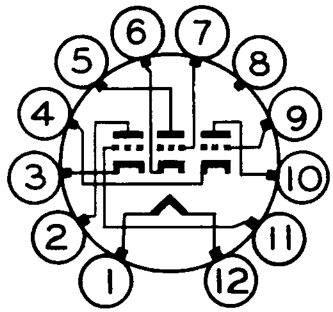


EIA 9-56

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Plate (Section 3)
Pin 3 - Cathode (Section 3)
Pin 4 - Cathode (Section 1)
Pin 5 - Plate (Section 2)
Pin 6 - Cathode (Section 2)
Pin 7 - Grid (Section 2)
Pin 8 - No Connection
Pin 9 - Grid (Section 1)
Pin 10 - Plate (Section 1)
Pin 11 - Grid (Section 3)
Pin 12 - Heater

BASING DIAGRAM



EIA 12FE

MAXIMUM RATINGS (Cont'd)

DESIGN-MAXIMUM VALUES

	Sections 1 and 3	Section 2	
Plate Voltage	330	330	Volts
Positive DC Grid Voltage	0	0	Volts
Negative DC Grid Voltage	50	50	Volts
Plate Dissipation	2.0	1.0	Watts
DC Cathode Current	20	---	Milliamperes
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	275	200	Volts
Grid Circuit Resistance**			
With Fixed Bias	1.0	0.5	Megohms
With Cathode Bias	2.0	1.0	Megohms

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

	Sections 1 and 3	Section 2	
Plate Voltage	200	200	Volts
Grid Voltage	-6.0	-1.5	Volts
Amplification Factor	17.5	98	
Plate Resistance, approximate	7700	61000	Ohms
Transconductance	2300	1600	Micromhos
Plate Current	9.6	1.2	Milliamperes
Grid Voltage, approximate			
Ib = 100 Microamperes	-15	---	Volts
Grid Voltage, approximate			
Ib = 35 Microamperes	---	-3	Volts

NOTES

* Operated with the heater in series with the heaters of other tubes having the same bogey heater current.

‡ Operated with the heater in parallel with the heaters of other tubes having the same bogey heater voltage.

§ For parallel heater operation, the equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance; for series heater operation, the equipment designer should design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.

¶ Heater current of a bogey tube at Ef = 6.3 volts.

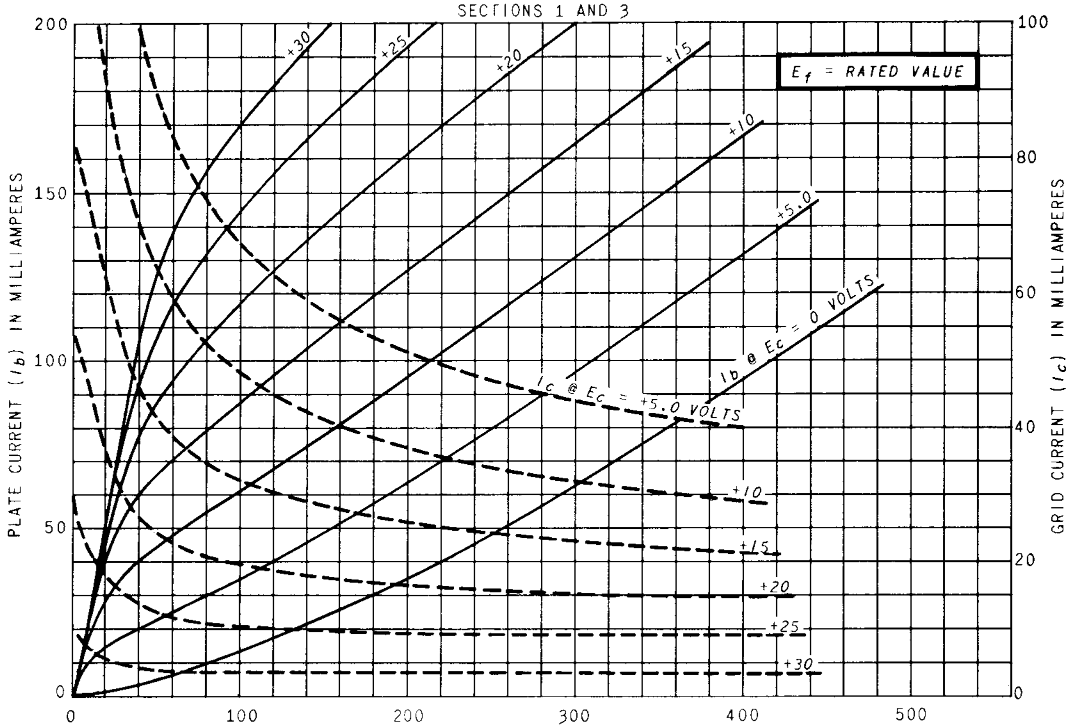
The time required for the voltage across the heater to reach 80 percent of the bogey value after applying 4 times the bogey heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the bogey heater voltage divided by the bogey heater current.

Δ Without external shield.

** In applications where self-bias is used with Section 2, a maximum grid curcuit resistance of 10 megohms is permissible, provided that the plate supply voltage and load resistance are such that the plate dissipation can never exceed 0.5 watts.

AVERAGE PLATE CHARACTERISTICS

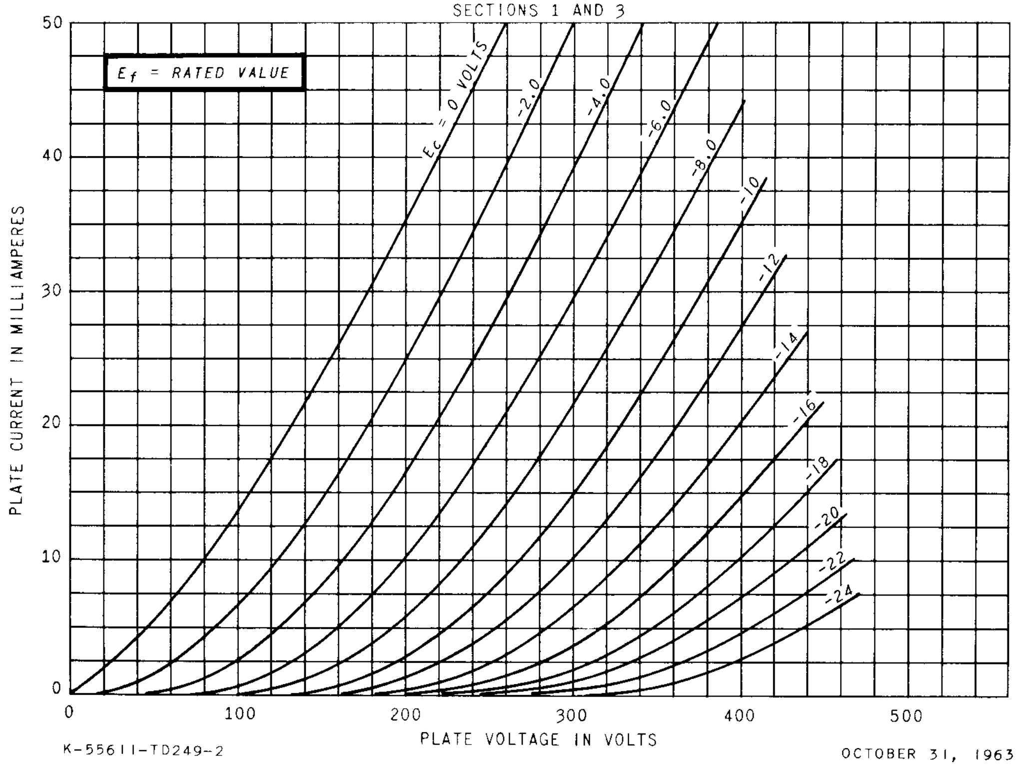
SECTIONS 1 AND 3



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AVERAGE PLATE CHARACTERISTICS

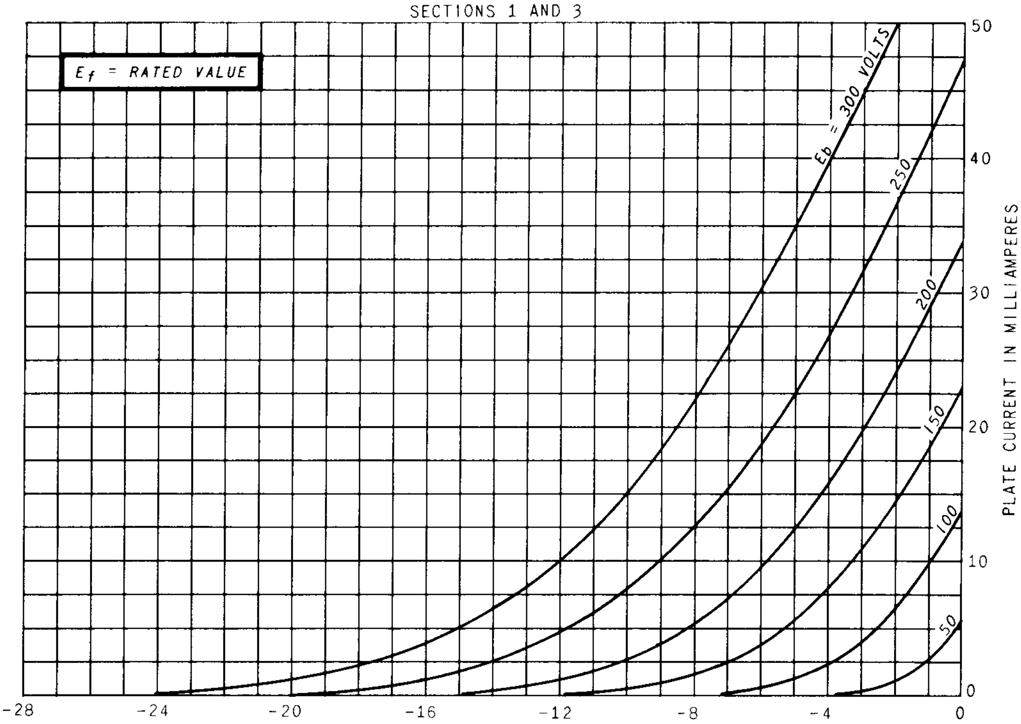
SECTIONS 1 AND 3



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AVERAGE TRANSFER CHARACTERISTICS

SECTIONS 1 AND 3

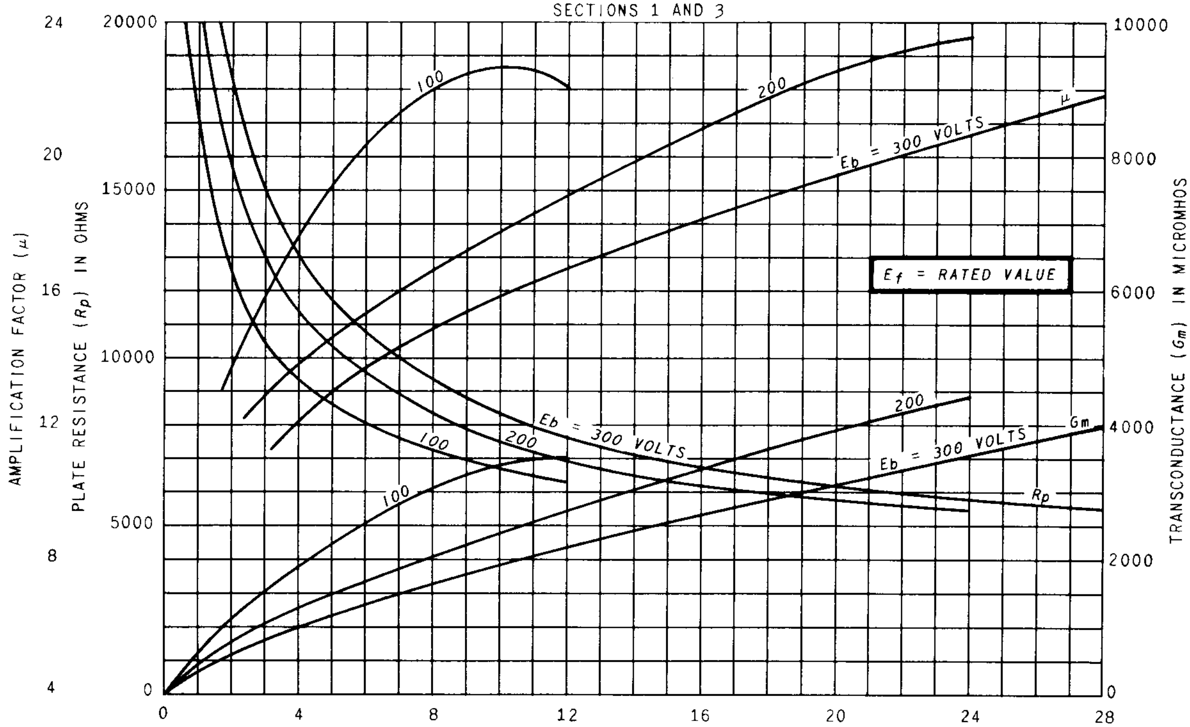


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AVERAGE CHARACTERISTICS

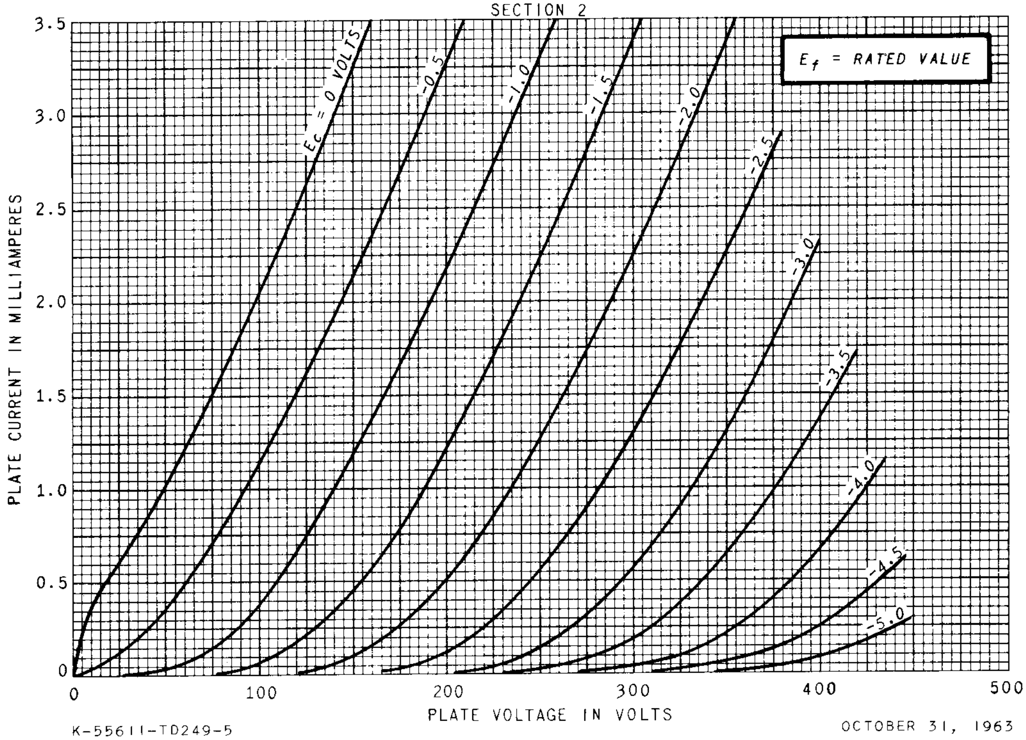
SECTIONS 1 AND 3



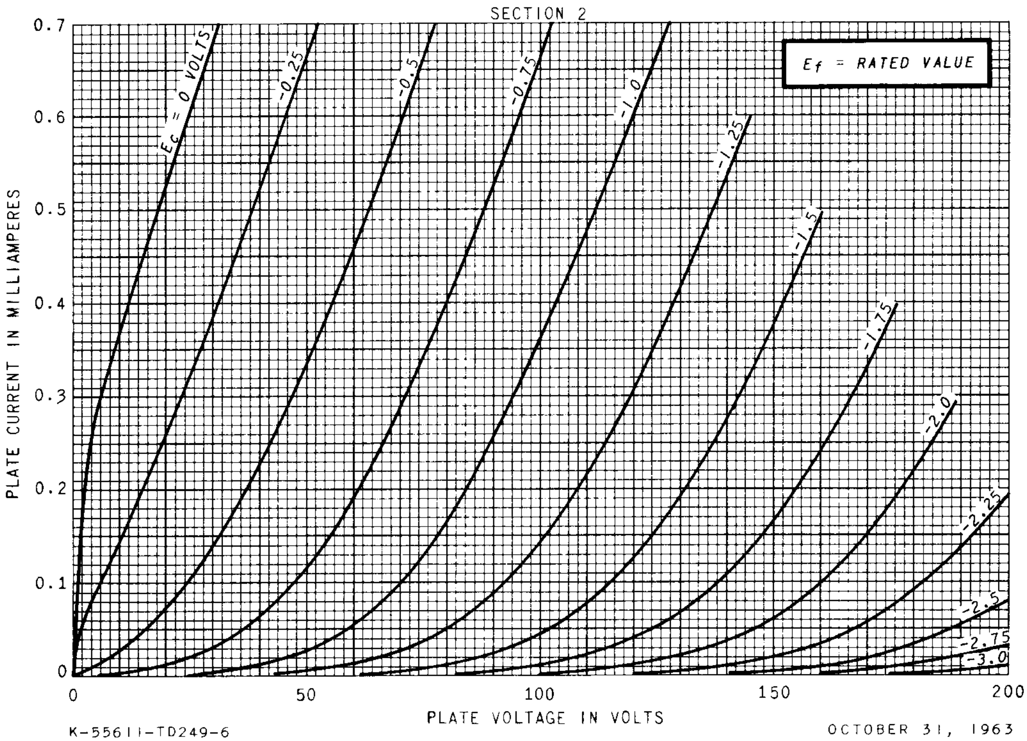
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AVERAGE PLATE CHARACTERISTICS

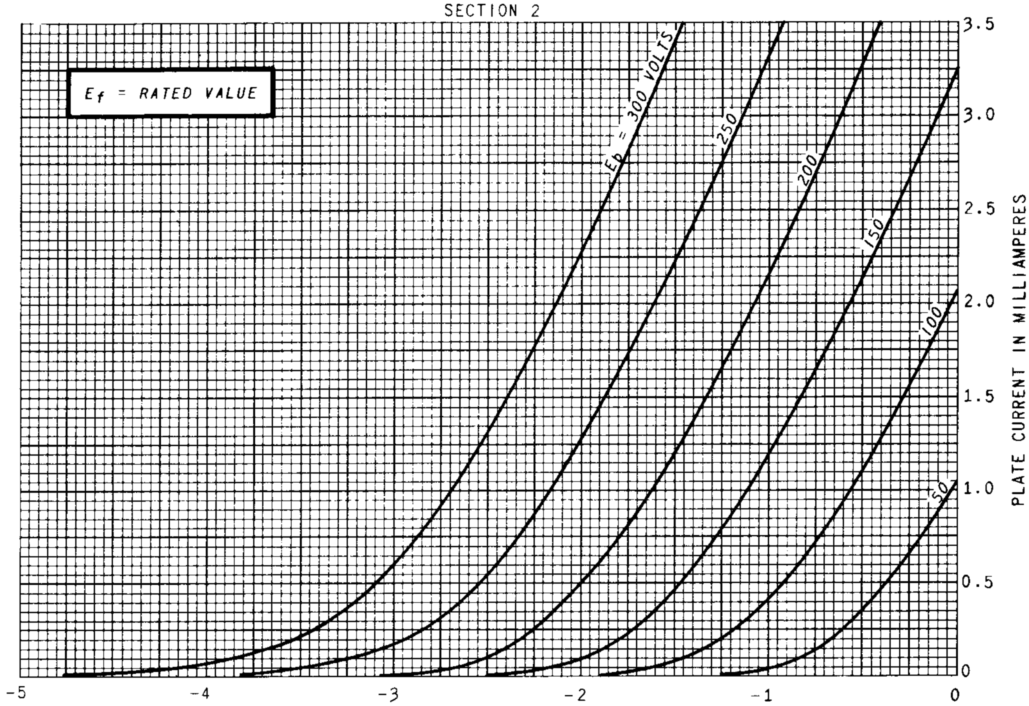


AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS

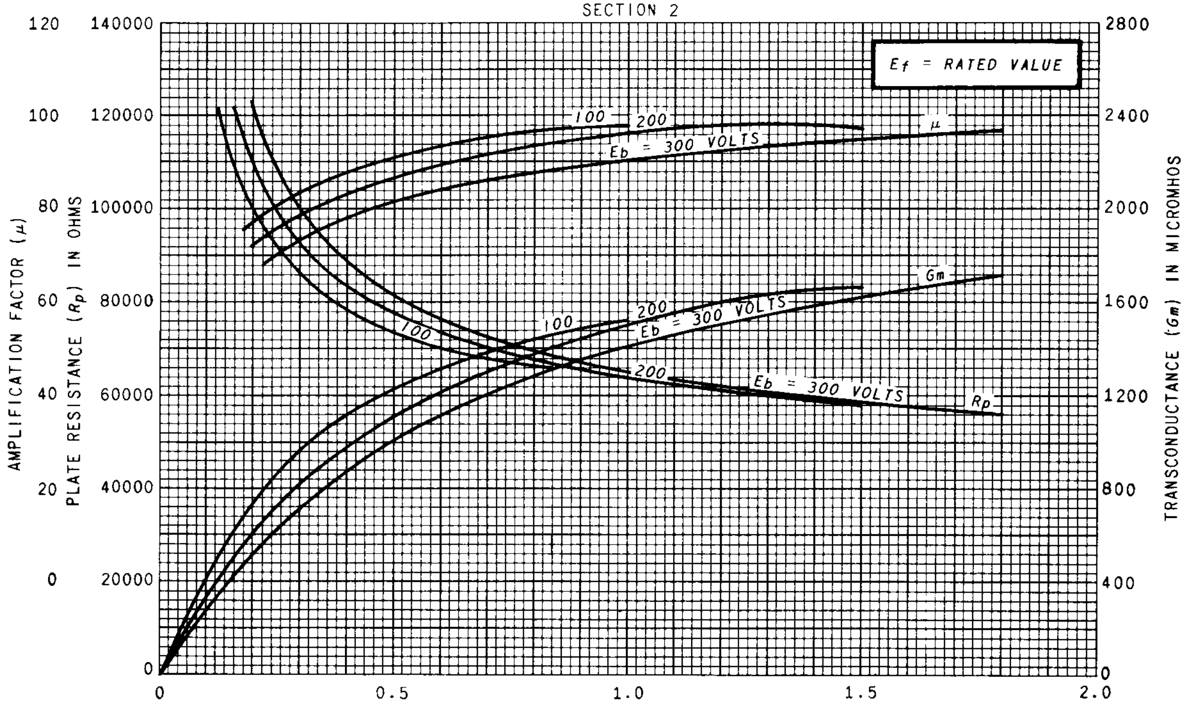
SECTION 2



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AVERAGE CHARACTERISTICS

SECTION 2



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TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky